

# Work Order ID 81978

**\*81978\***

Page 1

March-21-12 1:53:51 PM

Item ID: D206-642-341

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/21 Tooling:

Date:

Run Start **\*NR1\***

QC:

Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2650	F

100

0.00

**\*100\***

DOCUMENT CONTROL


DC

Memo

0.00

Document Control

Photocopy bluefile and create labels per PPP D206-642-341 CHG003

N/A 

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 81978

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Item ID: D206-642-341

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

110

0.00

**\*110\***

Skidtubes

0.00

Skidtubes

Skidtubes

Memo

1-Deburr Fwd edge of tube

2-Remove ridge on inside of Fwd edge of tube as per Dwg D2650

3-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required.

A/RAluminum Rod

4-Grind weld flush to cap on top surface only.

5-Cut aft end to length as per dwg D2650

6-Drill pilot holes using drill Jig DT8168A (A,& B ) and DT8025. Open to Ø0.312"

7-Drill holes for wearplates using DT 8028-5. Open to Ø 0.297".

8-Open Aft Cap Hole using #6 Drill Bit

9-Open holes for Tow Ring to Ø0.625" as per Dwg D2650, D2650-5 Drilling Detail

10-Remove inner indexing ridge on aft end of skidtube as per Dwg D2650

11-Deburr and Blow out all chips form inside the tube

*12-03-22*

*12/03/26*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

**Work Order ID 81978****\*81978\***

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Item ID: D206-642-341

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**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Replacement Skidtube

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115	QC5- Inspect part completeness to step on W/O	0.00							
<b>*115*</b>									
QC	Memo	0.00							
Quality Control									
120	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*120*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
125	QC7-Inspect Chemical Conversion Coat	0.00							
<b>*125*</b>									
QC	Memo	0.00							
Quality Control									

DP 12-3-26

DC 12/03/26

DP 12-3-26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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March-21-12 1:53:52 PM

Item ID: D206-642-341

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

0.00

**\*130\***

Skidtubes

0.00

Skidtubes

Memo

1-Open holes to finished size as per Dwg D2650, D2650-5 Drilling Detail  
(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2650(without cutting fluid)

3-Deburr. Blow out chips. Grind alodine off around crossbolt spacer.

4-Bond D2654-5 web in place as per QSI 015 Ensure holes line up Allow 12 Hrs.  
cure time before cutting

Start Date: 3/8 Time: 12/03/26

Finish Date: 12/03/27 Time: 8:00

A/RSikaflex-291 120813

Sikaflex expiry date: 12/08/13

DC 12/03/26

140

QC5- Inspect part completeness to step on W/O

0.00

**\*140\***

QC

Memo

0.00

Quality Control

1 8 BG 12/03/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



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**\*N900040100\***

Setup Start \*NS1\*

Stop \*NS2\*

**\* 1 \***

**Cust Item ID:**

**\* 1 \***

**Customer:**

**Reference:**

Run Start \*NR1\*

Date:

Stop **\*NR2\***

**SPC (Y/N):**

Date:

**Insp.**

0.00

**\*150\***

## Skidtubes

## Memo

0.00

## Skidtubes

## Skidtubes

1-Prep per QSI 005 and Insert cross bolt spacers D2649. Weld as per QSI 004 and Dwg D2650. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.  
A/RAluminum Rod m120164 BE 12/03/27

2-Grind welds flush as per Dwg D2650. Masking Tape access to inside of the Skidtube

3-Counterbore 5/16" x 0.750" deep as per Dwg D2650Deburr

4- Install nut plate as per dwg

170

QC10- Inspect visual per QSI004- ground welds

0.00

**\*170\***

QC

## Memo

0.00

## Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries.

# Work Order ID 81978

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Item ID: D206-642-341

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

**\*180\***

QC

Memo

0.00

Quality Control

190

Pressure Wash per QSI005 4.3

0.00

**\*190\***

HandFinish

Memo

0.00

Hand Finishing

Brush alodine tube on crossbolt spacer area, do not acid etch, do not dip tube in tank.

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

**\*200\***

Powdercoat

Memo

0.00

Powder Coating

START TIME: 8h25  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 8h55

M120 222

1X1 M-L 12/03/09

1 Q (P) 12/03/02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 81978****\*81978\***

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Item ID: D206-642-341

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

210

QC3- Inspect Part Finish

0.00

**\*210\***

QC

Memo

0.00

Quality Control

IXD M-L 12/04/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 81978**

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**\*81978\***

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Item ID: D206-642-341

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220

0.00

**\*220\***

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Install inserts &amp; wearpads as per dwg D2922. Use a drop of Sikaflex inside insert holes before installing wearpad/wearplate.

A/RSikaflex-291

Sikaflex expiry date:

2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2650. Clean excess adhesive

3-Install MS27039-4-06 Screw

4-Inspect for foreign object per QSI 024

5-Install D2646 Aft Cap and seal with Sikaflex Clean excess adhesive

A/RSikaflex-291

Sikaflex expiry date:

6-Wing Walk as per Dwg D2650-5 and QSI 005 4.4

Batch:

1XØ 12/04/04 *ML*

*MT20318*  
*12/08*  
*MT20959*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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# Work Order ID 81978

**\*81978\***

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March-21-12 1:53:52 PM

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC3- Inspect Part Finish	0.00							
<b>*230*</b>									
QC	Memo	0.00							
Quality Control									
240	QC5- Inspect part completeness to step on W/O	0.00							
<b>*240*</b>									
QC	Memo	0.00							
Quality Control									
250	Packaging	0.00							
<b>*250*</b>									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-642-341								
	Location: _____								
	PPP Rev: <u>PPP 8/990</u>								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Revision ID:

Item Name: Replacement Skidtube

Stop **\*NS2\***

Start Date: 21/03/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 04/04/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	QC21- Final Inspection - Work Order Release	0.00							
<b>*260*</b>									
QC	Memo	0.00							
Quality Control									

12/4/12  
12-04-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

# Picklist Print

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Page 1

Work Order ID: 81978

\*81978\*

Parent Item: D206-642-341

\*D206-642-341\*

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

## Comments:

IPP Rev: H05.10.11 Added D3429-1 per CHG004KJ/CP/JLM  
 IPP Rev: I 08-09-29 revF as per dwg DD verified by: EC Est Rev: J 09-03-02 as per DSI9440 rev.a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN960JD416 Washer	NAS1149D0463J	Purchased	No				Each	14.0000		1			
*AN960JD416*													
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				ST351		14							
					116289	14							
CCR264SS3-3 Cherry Rivet		Purchased	No				Each	581.0000		2			
*CCR264SS3-3*													
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				ST331		581							
					113973	2							
					117849	111							
					119017	468							
CR3212-4-03 Cherry Rivet		Purchased	No				Each	1,438.000		2			
*CR3212-4-03*													
				<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>						
				FP002		448							
					114859	448							
				ST331		990							
					110139	2							
					119017	988							

118384

\*\*

1 mkt 12/04/03

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2 3 12/03/28

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2 3 12/03/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2620

Manufactured No

Each 24.0000

**\*D2620\***

Skidtube, 206 Skidtube

\*\*

1  
① *ATD* 12-03-22

Location

Loc Qty

Loc Code

LG

24

77999

1

79543

2

79544

2

79545

1

81365

10

81366

8

D2647

Manufactured No

Each 43.0000

**\*D2647\***

Cap

\*\*

1  
*BEK* 03/26

Location

Loc Qty

Loc Code

LG002

43

75482

43

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

March-21-12 1:53:57 PM

Page 3

Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

Each

1,360.000

19

**\*D2649\***

Cross Bolt Spacer

**\*\***

*BE 12/03/27*

Location

Loc Qty

Loc Code

LG

903

77574

2

79502

403

79503

399

79565

99

LG001

457

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

78020

6

78583

2

79566

330

*19*

D2654-5

Manufactured No

Each

12.0000

1

**\*D2654-5\***

Web

**\*\***

*DC 12/03/26*

Location

Loc Qty

Loc Code

LG

12

80057

6

81326

6

*1*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-21-12 1:53:57 PM

Page 4

Work Order ID: 81978

\*81978\*

Parent Item: D206-642-341

\*D206-642-341\*

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2680-041

Manufactured No

Each 144.0000

\*D2680-041\*

Nut Plate

\*\*

1  
① 12/03/28

Location	Loc Qty	Loc Code
ST013	116	
78016	116	
ST019	28	
76790	28	

MS27039C1-08

Purchased No

Each 1,594.000

\*MS27039C1-08\*

SCREW

\*\*

56  
m-l 12/04/03

Location	Loc Qty	Loc Code
FP002	1	
116022	1	
ST292	1500	
120308 ✓	1000	
121068	500	
ST293	93	
116373	3	
118077	14	
119309	76	

ALS4-1032-130

Purchased No

220 Each 4,213.000 54

\*AI S4-1032-130\*

Insert

\*\*

54  
m-l 12/04/03

Location	Loc Qty	Loc Code
ST280	283	
119084	116	
120671	167	
ST281	3930	
120807 ✓	1930	
120837	2000	

March-21-12 1:53:57 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-21-12 1:53:57 PM

Page 5

Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased No

220 Each 0.0000 54 54

**\*AN960C10I \***

washer

M121255 \*\*

54 m-l 12/04/03 #

AN960JD10L NAS1149D0332J Purchased No

220 Each 0.0000 2 2

**\*AN960.ID10I \***

Washer

120644 \*\*

2 m-l 12/04/03 #

D2646 Manufactured No

220 Each 118.0000 1 1

**\*D2646\***

Aft Cap

\*\*

m-l 12/04/03

## Location

## Loc Qty

## Loc Code

FP002

118

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018

24

79500 ✓

33

79562

45

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-21-12 1:53:57 PM

Page 6

Work Order ID: 81978

\*81978\*

Parent Item: D206-642-341

\*D206-642-341\*

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2651-1

Manufactured No

220

Each

505.0000

14

14

\*D2651-1\*

Plug

\*\*

m/p 12/04/03

Location

Loc Qty

Loc Code

FP001

799

57869

1

66445

10

69018

2

70827

2

70839

8

71037

8

77559

30

78584 ✓

188

79234

250

FP-A

-294

77559

1

78124

5

D2651-3

Manufactured No

220

Each

1,860.000

14

14

\*D2651-3\*

O-Ring

\*\*

m/p 12/04/03

Location

Loc Qty

Loc Code

FP001

16

61962

12

73828

4

FP-A

1844

78126 ✓

1844

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

March-21-12 1:53:57 PM

Page 7

Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-11

Manufactured No

220

Each

21.0000

1

1

**\*D3535-11\***

Wearshoe

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

FP001

21

71284 ✓

6

79058 ✓

15

D3535-23

Manufactured No

220

Each

28.0000

1

1

**\*D3535-23\***

Wearshoe

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

FP001

28

74508 ✓

10

80330

18

D3535-35

Manufactured No

220

Each

25.0000

1

1

**\*D3535-35\***

Wearshoe

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

FP001

25

67598

1

70815

1

78873

13

79849

1

80332 ✓

9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-21-12 1:53:57 PM

Page 8

Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-11

Manufactured No

220

Each

28.0000

1

1

**\*D3536-11\***

Gasket

\*\*

*M-L 12/04/03*

Location

Loc Qty

Loc Code

FP002

28

46649

1

46715

4

65574

1

80006 ✓

22

D3536-23

Manufactured No

220

Each

36.0000

1

1

**\*D3536-23\***

Gasket

\*\*

*M-L 12/04/03*

Location

Loc Qty

Loc Code

FP002

36

43406

1

74510 ✓

9

80334

26

D3536-35

Manufactured No

220

Each

25.0000

1

1

**\*D3536-35\***

Gasket

\*\*

*M-L 12/04/03*

Location

Loc Qty

Loc Code

FP002

25

80335 ✓

25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

March-21-12 1:53:57 PM

Page 9

Work Order ID: 81978

**\*81978\***

Parent Item: D206-642-341

**\*D206-642-341\***

Parent Item Name: Replacement Skidtube

Start Date: 21/03/2012

Required Date: 04/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-1 Manufactured No

220 Each 96.0000 6 6

**\*D3537-1\***

Wearpad

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

FP001

91

79833

37

79835

54

FP002

5

69817

5

*80337*

*6*

D3537-3 Manufactured No

220 Each 7.0000 1 1

**\*D3537-3\***

Wearpad

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

FP002

7

74500

2

76986

5

*80338*

*1*

MS27039-4-06 Purchased No

220 Each 183.0000 1 1

**\*MS27039-4-06\***

Screw

\*\*

*m-l 12/04/03*

Location

Loc Qty

Loc Code

ST292

183

119075 ✓

183

*1*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

F

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 81978

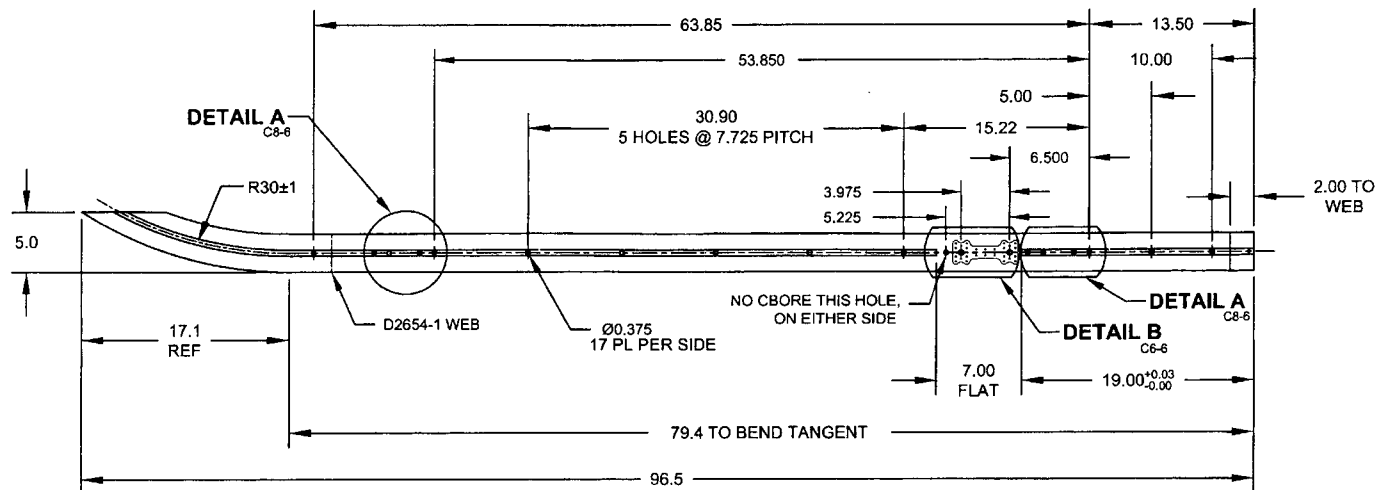
R120321

RELEASED  
08-07-23

# NOTES:

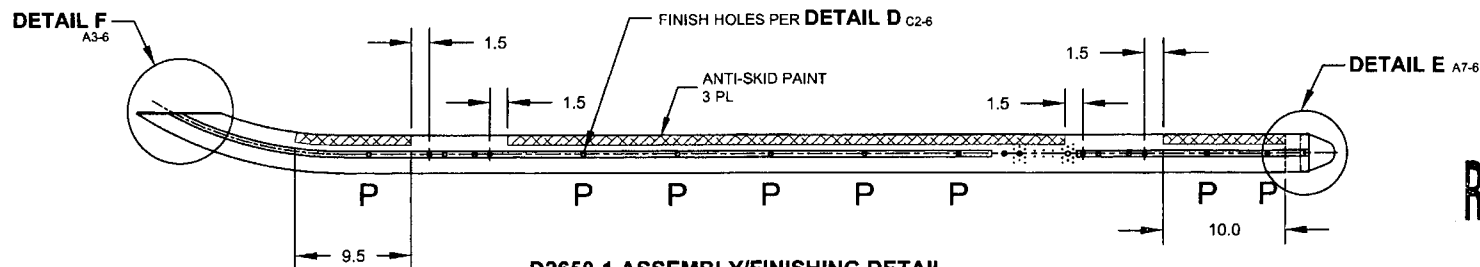
- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3  
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	RMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	06.03.30
D	REDRAW: INCCRP. DE09136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED	J	DRAWING NO.	REV. F
MFG. APPR.	J	D2650	SHEET 1 OF 6
APPROVED	J	TITLE	SCALE
DE APPR.	J	206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSONS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



**D2650-1 BENDING/DRILLING DETAIL**

81975



**D2650-1 ASSEMBLY/FINISHING DETAIL**

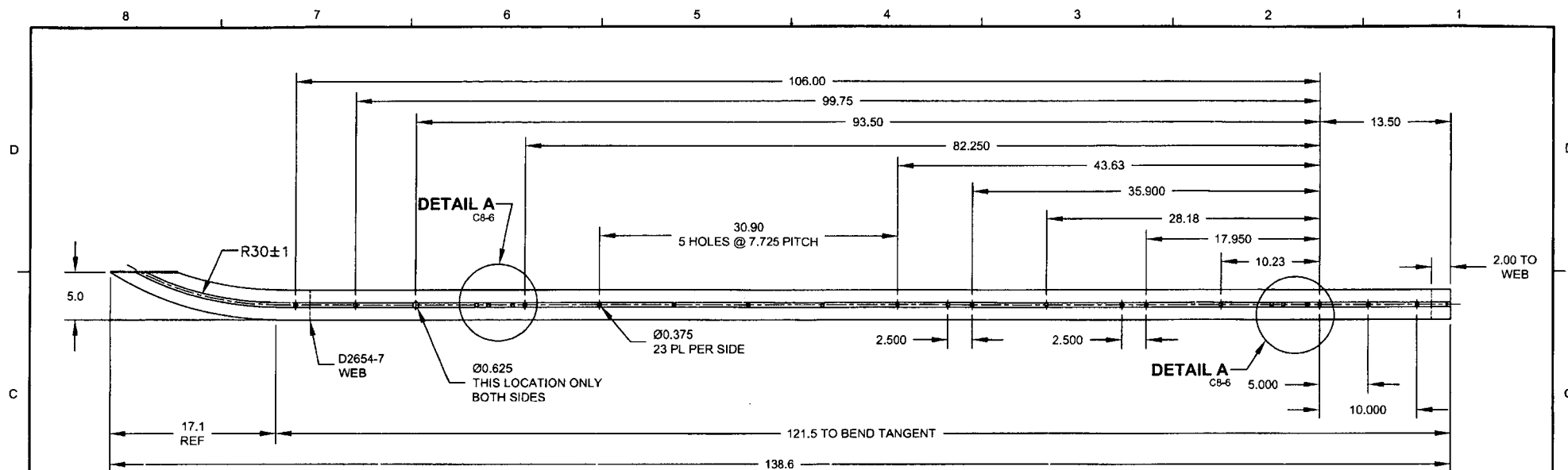
**RELEASED**  
880722/111

DESIGN	DS	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 2 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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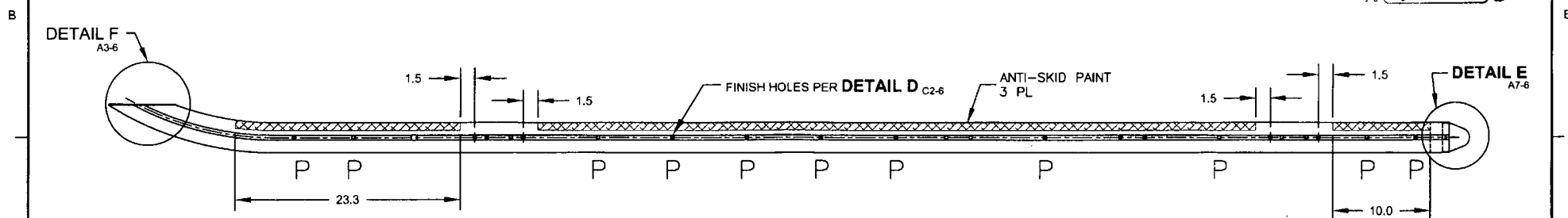




**D2650-7 BENDING/DRILL DETAIL**

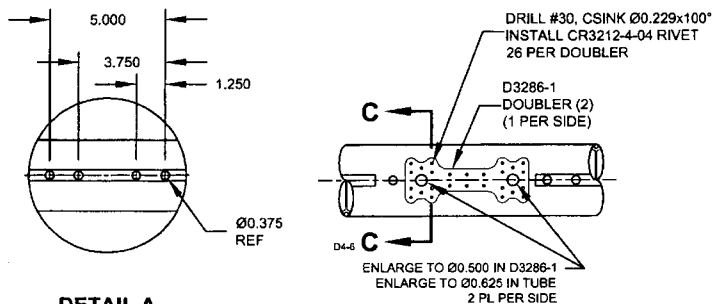
81978

RELEASED  
08-07-22

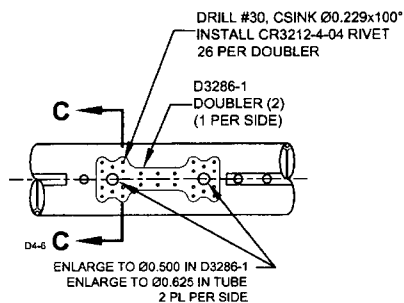


**D2650-7 ASSEMBLY/FINISHING DETAIL**

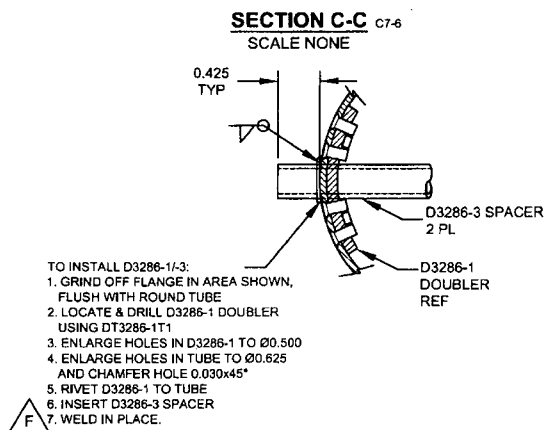
DESIGN	DS	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 5 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	<small>COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	



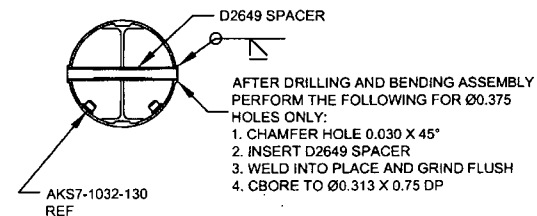
**DETAIL A**  
SCALE 2X  
C2-2  
D7-2  
C2-3  
D7-3  
C2-4  
D7-4  
C2-5  
D6-5



**DETAIL B**  
SCALE 2X  
C3-2  
C3-3

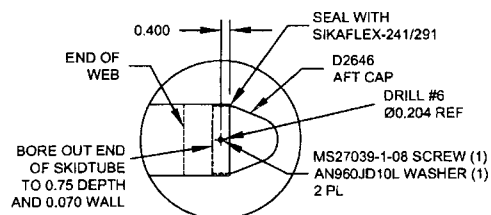


- TO INSTALL D3286-1/3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH ROUND TUBE
  2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
  3. ENLARGE HOLES IN D3286-1 TO Ø0.500
  4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.030x45°
  5. RIVET D3286-1 TO TUBE
  6. INSERT D3286-3 SPACER
  7. WELD IN PLACE.

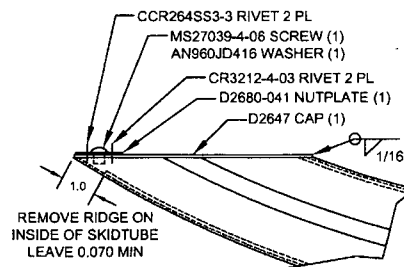
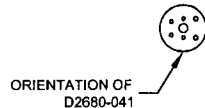


**DETAIL D**  
FOR Ø0.375 HOLES ONLY  
SCALE 3X  
B4-2  
B4-3  
B4-4  
B4-5

81978



**DETAIL E**  
SCALE 2X  
B2-2  
B2-3  
B1-4  
B1-5



**DETAIL F**  
SCALE NONE  
B8-2  
B8-3  
B8-4  
B8-5

- DETAIL F NOTES:**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D2647 (TRIM AS NECESSARY)
  4. WELD D2647 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D2680-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D2680-041 PRIOR TO FINISH

RELEASED  
05-09-22-13

DESIGN	DS	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.	<i>[Signature]</i>	D2650	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC	
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NO. 252

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 66358  
Part number: 5206 642 541  
Description: 206  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Pat Curry Date of Test Coupon 11-05-09  
Welder Barclay Elliott Date of Test Coupon 11-05-09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld